



## Increasing Use of IP for Blockchain Inventions

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While there is no agreed upon definition of blockchain, this technology is often associated with an append-only, tamper-resistant, distributed ledger of peer-to-peer transactions maintained by a decentralized network of participants. As the name suggests, blockchain consists of 'blocks' of transactions that are cryptographically linked together. Blockchain technology has gained immense popularity in the field of financial transactions, particularly due to high costs associated with conventional means of monitoring and managing instances of fraud in traditional bank transactions.

While blockchain is popularly associated with cryptocurrencies (like Bitcoin, or Ethereum) and other 'fintech' applications, the use cases of blockchain continue to expand into many other real-world applications. For example, voter registration is being facilitated via blockchain-based projects such as [Agora and Voatz](#). Companies like IBM, Walmart and Unilever are using blockchain to enable tracking of food items from [farm to table](#).

Blockchain is also being applied in the field of intellectual property. For example, a Munich based startup, [Bernstein](#), offers a blockchain solution for recording ownership and registration information about intellectual property assets and innovation processes to prove ownership, existence and integrity of those assets. Similarly, [smart contracts](#) are being increasingly recognized as powerful tools for establishing and enforcing licensing and other agreements.

The popularity of blockchain can also be evaluated from the exponential increase in the number of patent filings for blockchain applications. A patent is a powerful form of IP protection that grants the patent owner an exclusive right to exclude others from making, using, selling or importing the claimed subject matter without the owner's permission.

A survey of the [United States Patent and Trademark Office](#) for "blockchain" indicates that approximately 2,200 patent applications have been published, of which 437 have issued to patents. In contrast, approximately 100 patent applications appear to have been filed and published at the Canadian Intellectual Property Office, of which only one appears to have been issued. On a global scale, about half of the patent applications in this field have been filed by only [seven companies](#), namely IBM, nChain, Walmart, Intel, Alibaba, Mastercard and Bank of America.

While more and more blockchain patent applications continue to be filed by financial institutions, legacy technology companies, as well as new and emerging startups, patentability and validity of blockchain inventions face some uncertainty, especially in view of ongoing debates about treatment of computer-implemented inventions at various patent offices. To be patentable in Canada and the U.S., an invention must meet the following criteria of patentability – patentable subject matter, novelty, utility and inventiveness. Of these, the most relevant to blockchain technology is the subject matter eligibility of the blockchain claims.

The Federal Court of Appeal (FCA) decision in [Canada \(Attorney General\) v. Amazon.com, Inc., 2011 FCA 328 \(Amazon\)](#) provides guidance with respect to the treatment of software inventions by Canadian courts. In this case, while considering *Amazon's* patent application (directed to one-click online ordering system), the FCA opined that "a novel business method may be an essential element of a valid patent claim" and agreed that patentable subject matter "must be something with physical existence, or something that manifests a discernible effect or change".

In the U.S., the Supreme Court's decision in [Alice Corp. v. CLS Bank International, 573 U.S. 208, 134 S. Ct. 2347 \(2014\) \(Alice\)](#) and subsequent practice guidelines issued by the USPTO provide guidance regarding treatment of computer-implemented inventions. More recently, the [USPTO's revised guidelines](#) clarify that the mere presence of an abstract idea is not determinative of subject matter eligibility on its own; rather, the USPTO examiners are instructed to



consider whether the abstract idea is “integrated into a practical application” to see if the claimed invention “. . . is more than a drafting effort designed to monopolize the [abstract idea].”

Consistent with the patent office practices in Canada and the U.S., granted blockchain patents range from those directed to [improvements](#) to the underlying technology (*like* rewritable blockchain, or changing an existing blockchain) to specific uses of blockchain technology (*like* [indicating when a product arrives at a destination](#), [managing data for autonomous vehicles on a decentralized ledger](#), or [blockchain based identity management system](#), for example).

While blockchain technology is still in its infancy, it is evolving rapidly. As blockchain technology becomes more mainstream and continues to be used in solving real-world problems, it is reasonable to assume that not only the blockchain-based products and services, but also the intellectual property protecting such technology, will have significant commercial value. A well-developed IP strategy and comprehensive patent applications can help avoid patentability challenges that face this technology.

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